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The Trusted Integrator for Sustainable Solutions

May 13, 2014

Mr. Andrew Fessler, Work Assignment Manager
U.S. Environmental Protection Agency
290 Broadway - 18th Floor
New York, NY 10007-1866

Document Control No.: 2222-2F-BLWR

Subject: **QAPP Addendum**
Work Assignment No. 2222, Canadian Radium & Uranium Corp. SR
Contract No.: EP-S5-06-04, TDD No.: S05-0013-1307-009

Dear Mr. Fessler:

Weston Solutions, Inc. (WESTON®) is pleased to submit the Quality Assurance Project Plan (QAPP) Addendum for the sediment sampling associated with the Canadian Radium & Uranium Corp. site. WESTON personnel plan to collect sediment samples on May 15, 2013. If you have any questions, please contact me at (732) 417-5814.

Very truly yours,

WESTON SOLUTIONS, INC.

Denise Breen

Denise Breen
Assistant Project Scientist

enclosure
cc:
C. Romano, EPA (w/o enclosure)
G. Gilliland, WESTON (w/o enclosure)
Site file

Site Name/Project Name: Canadian Radium & Uranium Corp.
Site Location: 103-105 Kisco Avenue, Mt. Kisco, Westchester County, NY 10549
Operable Unit: 00
Title: Site-Specific UFP QAPP
Revision Number: 01
Revision Date: May 13, 2014

TASK SUMMARY

In order to characterize the surface water pathway, Region 2 Site Assessment Team (SAT) will collect sediment samples along the surface water pathway. Sediment sampling will include the collection of six sediment samples, including one field duplicate sample. Sediment sample collection depth will be 0-6 inch intervals below sediment surface. Sediment samples will be collected in an upstream direction, beginning with the furthest downstream location. Background samples will be collected from locations suspected to not have been impacted by the historic on-site activities. One rinsate blank will be collected to document adequate decontamination of non-dedicated sampling equipment.

Sediment will be collected using a petite ponar dredge or hand augers and homogenized in dedicated, disposable aluminum trays with disposable polyethylene scoops prior to insertion into the sample containers. The sediment samples will be analyzed by an off-site laboratory for Target Analyte List (TAL) metals analysis including mercury; Isotopic Thorium and Isotopic Uranium by alpha spectroscopy; radioisotopes including Radium-226 and Radium-228 by gamma spectroscopy; and stable isotopic lead.

Region 2 SAT will collect locational data using Global Positioning System (GPS) technology and collect photo documentation of the sampling activities.

The site work is scheduled for May 15, 2014.

Decontamination:

Decontamination of non-disposable sampling equipment, including petite ponar dredge and/ hand augers, will be performed before and after the sampling event and between sample locations, and will consist of the following steps:

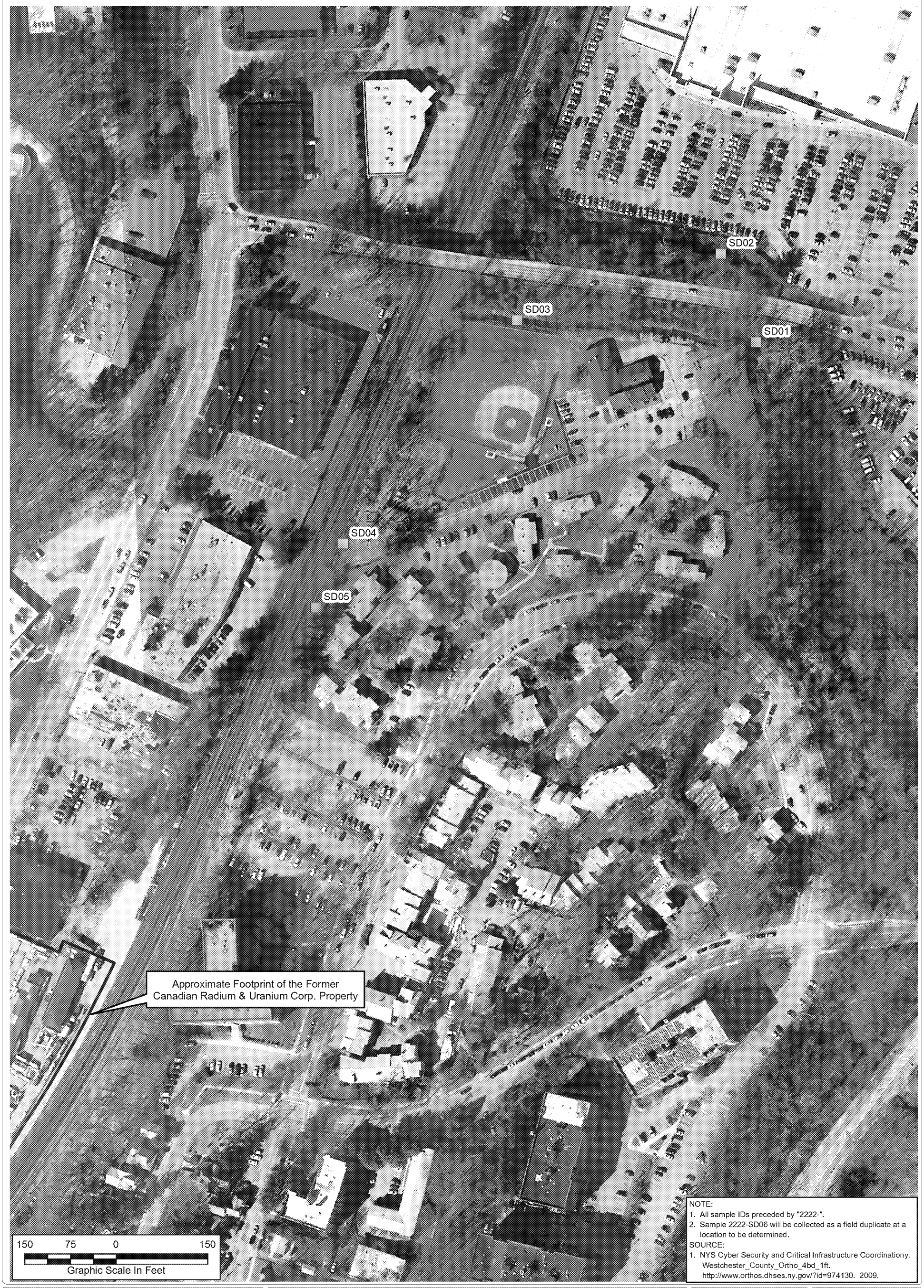
1. Soap and water scrub.
2. Tap water or deionized (DI) water rinse.
3. Steam-clean with DI water.
4. Air dry.
5. Screen with radiation meter for residual contamination.
6. Foil wrap if not immediately re-used.

Quality Control Tasks:

The sediment samples will be collected for definitive data QA objective. One field duplicate will be collected, and one sediment sample will be designated for MS/MSD analysis, as applicable.

Figure 1
Proposed Sample Location Map

P:\SAT2\2013 NY RAD Sites\Canadian_Radium_Uranium\MXD\15064_CRU_Prop_Sed_Loc.mxd



NOTE:
1. All sample IDs preceded by "2222-".
2. Sample 2222-SD06 will be collected as a field duplicate at a location to be determined.

SOURCE:
1. NYS Cyber Security and Critical Infrastructure Coordinationy. Westchester_County_Ortho_4bd_1ft. http://www.orthos.dhses.ny.gov/?id=974130. 2009.

LEGEND:
- Proposed Sediment Sample Location
- Approximate Footprint of the Former Canadian Radium & Uranium Corp. Property

PROJECT: Canadian Radium & Uranium Corp.

CLIENT NAME: EPA

TITLE:
Proposed Sediment Sample Location Map
Canadian Radium & Uranium Corp.
103/105 Kisco Avenue
Mount Kisco, NY 10549

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DRAWING NUMBER: 15064

FIGURE #: 1

DRAWN BY: J. Lynes

REVIEWED BY: D. Breen

PROJECT MANAGER: D. Breen

SCALE: 1" = 150'

DATE: May 2014

N W E S

TABLE 1
ANALYTICAL SERVICES
CANADIAN RADIUM & URANIUM CORP. SITE SR SEDIMENT SAMPLING

Sample Type	Number of Samples	Matrix	Sampling Device	Sample Container [1]	Sample Preservation	Technical Holding Time [2]	Laboratory Analyses [3]
Sediment Soil	5 (includes one duplicate and one MS/MSD)	Sediment (Low/Med Concentration)	Dedicated aluminum tray/plastic scoop; Petite Ponar dredge/sediment hand auger	2-oz. glass jar	Cool to 4^0 C	6 months	TAL Metals incl. Hg SW846 6010C/ 7471B ST-MT-0003, ST-MT-0007
				4-oz. glass jar	None	6 months	Isotopic Thorium and Isotopic Uranium by alpha spectroscopy HASL 300 ST-RD-0210
				16-oz. plastic jar	None	6 months	Radioisotopes by gamma spectroscopy (includes Radium-226 and Radium-228) HASL 300 ST-RD-0102
				4-oz. glass jar	Cool to 4°C	6 months	Stable Isotopic Lead ICP-MS
Rinsate Blanks[4]	1	Aqueous (Low/Med Concentration)	Spigot	250 mL Plastic	HNO_3, Cool to 4^0 C	6 months	TAL Metals incl. Hg SW846 6010C/ 7470A ST-MT-0003, ST-MT-0005
				2 L Plastic	HNO_3	6 months	Isotopic Thorium and Isotopic Uranium by alpha spectroscopy HASL 300 ST-RD-0210
				2 L Plastic	HNO_3	6 months	Radioisotopes by gamma spectroscopy (includes Radium-226 and Radium-228) HASL 300 ST-RD-0210
				1 L Plastic	HNO_3	6 months	Radium-226/228 SW846 9315/9320 ST-RD-0403

TABLE 1 (CONTINUED)
ANALYTICAL SERVICES
CANADIAN RADIUM & URANIUM CORP. SITE SR SEDIMENT SAMPLING

Sample Type	Number of Samples	Matrix	Sampling Device	Sample Container [1]	Sample Preservation	Technical Holding Time [2]	Laboratory Analyses [3]
				500 mL Plastic	HNO_3, Cool to 4^0 C	6 months	Stable Isotopic Lead ICP-MS

[1] = Sample containers are certified clean by the supplier.
[2] = Technical holding times are calculated from the date of sample collection.

TABLE 2
SAMPLE DESCRIPTIONS/RATIONALE
CANADIAN RADIUM & URANIUM CORP. SITE SR SEDIMENT SAMPLING

SAMPLE NUMBER	DESCRIPTION/RATIONALE
2222-SD01 **(MS/MSD)**	Sediment sample to be collected from sample location SD01, for waste source characterization, depth: 0 to 6 inches; Matrix Spike/Matrix Spike Duplicate (MS/MSD) for Quality Assurance/Quality Control (QA/QC) purposes.
2222-SD02	Sediment sample to be collected from sample location SD02, located downstream, for waste source characterization, depth: 0 to 6 inches.
2222-SD03	Sediment sample to be collected from sample location SD03, located downstream for waste source characterization, depth: 0 to 6 inches
2222-SD04	Sediment sample to be collected from sample location SD04, located at the PPE, for waste source characterization, depth: 0 to 6 inches
2222-SD05	Sediment sample to be collected from sample location SD05, located upstream for waste source characterization, depth: 0 to 6 inches
2222-SD06	Duplicate sediment sample for QA/QC purposes, from a sample location to be determined in the field.
2222-RIN01	Rinsate blank (Petite) for QA/QC purposes.

Temperature Blanks will be placed in each cooler with samples shipped to the laboratory.

TABLE 3
SAMPLE ANALYSES, BOTTLE TYPES, AND PRESERVATIVES
CANADIAN RADIUM & URANIUM CORP. SITE SR SEDIMENT SAMPLING

SAMPLE NUMBER	SAMPLE BOTTLES	ANALYSIS	PRESERVATION
2222-SD01 **(MS/MSD)**	1 4oz glass jar	Isotopic Thorium and Isotopic Uranium by alpha spectroscopy	Ice – cool to 4°C
	1 16oz plastic jar	Radioisotopes by gamma spectroscopy (includes Radium-226 and Radium-228)	
	1 2oz glass	TAL Metals	
	1 4oz glass jar	Stable Isotopic Lead	
2222-SD02	1 4oz glass jar	Isotopic Thorium and Isotopic Uranium by alpha spectroscopy	Ice – cool to 4°C
	1 16oz plastic jar	Radioisotopes by gamma spectroscopy (includes Radium-226 and Radium-228)	
	1 2oz glass	TAL Metals	
	1 4oz glass jar	Stable Isotopic Lead	
2222-SD03	1 4oz glass jar	Isotopic Thorium and Isotopic Uranium by alpha spectroscopy	Ice – cool to 4°C
	1 16oz plastic jar	Radioisotopes by gamma spectroscopy (includes Radium-226 and Radium-228)	
	1 2oz glass	TAL Metals	
	1 4oz glass jar	Stable Isotopic Lead	
2222-SD04	1 4oz glass jar	Isotopic Thorium and Isotopic Uranium by alpha spectroscopy	Ice – cool to 4°C
	1 16oz plastic jar	Radioisotopes by gamma spectroscopy (includes Radium-226 and Radium-228)	
	1 2oz glass	TAL Metals	
	1 4oz glass jar	Stable Isotopic Lead	
2222-SD05	1 4oz glass jar	Isotopic Thorium and Isotopic Uranium by alpha spectroscopy	Ice – cool to 4°C
	1 16oz plastic jar	Radioisotopes by gamma spectroscopy (includes Radium-226 and Radium-228)	
	1 2oz glass	TAL Metals	
	1 4oz glass jar	Stable Isotopic Lead	

TABLE 3 (CONTINUED)
SAMPLE ANALYSES, BOTTLE TYPES, AND PRESERVATIVES
CANADIAN RADIUM & URANIUM CORP. SITE SR SEDIMENT SAMPLING

SAMPLE NUMBER	SAMPLE BOTTLES	ANALYSIS	PRESERVATION
2222-SD06	1 4oz glass jar	Isotopic Thorium and Isotopic Uranium by alpha spectroscopy	Ice – cool to 4°C
	1 16oz plastic jar	Radioisotopes by gamma spectroscopy (includes Radium-226 and Radium-228)	
	1 2oz glass	TAL Metals	
	1 4oz glass jar	Stable Isotopic Lead	
2222-RIN01	5 1-Liter plastic	Isotopic Thorium and Isotopic Uranium by alpha spectroscopy	HNO_3, Cool to 4^0 C
		Radioisotopes by gamma spectroscopy (includes Radium-226 and Radium-228)	
	1 250-mL plastic	TAL Metals	
	1 500-ml plastic	Stable Isotopic Lead	

Addendum Title and Approval Page

Title: Site-Specific UFP Quality Assurance Project Plan (QAPP)
Site Name/Project Name: Canadian Radium & Uranium Corp.
Site Location: 103-105 Kisco Avenue, Mt. Kisco, Westchester County, NY 10549
Revision Number: 01
Revision Date: Not Applicable

EPA Region 2
Lead Organization

Denise Breen
Weston Solutions, Inc.
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Email: Denise.Breen@westonsolutions.com
Preparer's Name and Organizational Affiliation

November 19, 2013
Preparation Date (Day/Month/Year)

Site Project Manager:

Signature

Denise Breen/Weston Solutions, Inc.
Printed Name/Organization/Date

QA/Technical Reviewer:

Signature

Gerald V. Gilliland/Weston Solutions, Inc.
Printed Name/Organization/Date

EPA Region 2 Work Assignment Manager (WAM):

Signature

Andrew Fessler/EPA Region 2
Printed Name/Organization/Date

Other EPA Approval Signature:

Signature

Printed Name/Organization/Date